M7CL Specifications

General Specifications

Sampling Frequency	Internal: 44.1 kHz, 48 kHz External: 44.1 kHz (–10%) to 48 kHz (+6%) <M7CL-32/48> 44.1 kHz (–2.5%) to 48 kHz (+2.5%) <M7CL-48ES>
Signal Delay	Less than 2.5 ms INPUT or OMNI IN to OMNI OUT (@Fs = 48 kHz)
Fader	100mm motorized x62 (46)
Fader Resolution	+10 to –138, – dB (1024 steps/100 mm)
Maximum Voltage Gain	M7CL-32/48: 86 dB INPUT 1-48 to OMNI OUT M7CL-48ES: 86 dB OMNI IN 1-8 to OMNI OUT 1-8
Crosstalk (@1kHz)	M7CL-32/48/48ES -100dB*, -80dB Adjacent input Channels M7CL-32/48/48ES -100dB*, -80dB Input to output *Crosstalk is measured with a 30 dB/octave filter @22 kHz
Dimensions (W×H×D)	M7CL-48/48ES 1,274 (50 2/8) × 286 (11 2/8) × 701 (27 5/8) mm (in) M7CL-32 1,060 (41 6/8) × 286 (11 2/8) × 701 (27 5/8) mm (in)

* Refer to the Yamaha professional audio website for information on supported I/O cards.
http://www.yamahaproaudio.com/

Net Weight	M7CL-48: 50kg (110.23lbm) M7CL-32: 42kg (92.59lbm) M7CL-48ES: 46kg (101.41lbm)
Power Requirements (wattage)	M7CL-48: 300 W, 100V 50/60Hz M7CL-32: 250 W, 100V 50/60Hz M7CL-48ES: 150 W, 100V 50/60Hz
Power Requirements (voltage and hertz)	US/Canada: 120V 60Hz Japan: 100V 50/60Hz China: 110–240V 50/60Hz Korea: 220V 60Hz Other: 110–240V 50/60Hz
Operation free-air Temperature Range	+10 °C to +35 °C
Storage Temperature Range	–20 °C to +60 °C
Included Accessories	Owner's Manual, Dust cover, Power cord, Cord clamp
Optional Accessories	Meter Bridge MBM7CL, Mini-YGDAI cards *, Gooseneck Lamp LA1L Power Supply PW800W, Power Supply Link Cable PSL360

Analog Input Characteristics

Input Terminals	GAIN	Actual Load Impedance	For Use With Nominal	Input Level			Connector
				Sensitivity *1	Nominal	Max. Before Clip	
INPUT 1-48 <M7CL-48> INPUT 1-32 <M7CL-32>	–62 dB	3 kΩ	50-600Ω Mics & 600Ω Lines	–82dBu (61.6 μV)	–62dBu (0.616 mV)	–42dBu (6.16 mV)	XLR-3-31 type (Balanced) *2
	+10 dB			–10dBu (245 μV)	+10dBu (2.45 μV)	+30dBu (24.5 μV)	
ST IN 1-4 [L,R] <M7CL-32/48> OMNI IN 1-8 <M7CL-48ES>	–62 dB	3 kΩ	50-600Ω Mics & 600Ω Lines	–82dBu (61.6 μV)	–62dBu (0.616 mV)	–42dBu (6.16 mV)	XLR-3-31 type (Balanced) *2
	+10 dB			–10dBu (245 μV)	+10dBu (2.45 μV)	+30dBu (24.5 μV)	
TALKBACK	–60 dB	3 kΩ	50-600Ω Mics & 600Ω Lines	–70dBu (0.245 μV)	–60dBu (0.775μV)	–40dBu (7.75 μV)	XLR-3-31 type (Balanced) *2
	–16 dB			–26dBu (38.8 μV)	–16dBu (0.123 μV)	+4dBu (1.23 μV)	

* 1. Sensitivity is the lowest level that will produce an output of +4 dBu (1.23 V) or the nominal output level when the unit is set to maximum gain. (all faders and level controls are maximum position.)
* 2. XLR-3-31 type connectors with latch are balanced. (1=GND, 2=HOT, 3=COLD)
* In these specifications, 0 dBu = 0.775 Vrms.
* All input AD converters are 24bit linear, 128 times oversampling.
* +48V DC (phantom power) is supplied to INPUT (1-48 or 1-32), ST IN 1L-4R, OMNI IN 1-8 and TALKBACK XLR type connectors via each individual software controlled switches.

Analog Output Characteristics

Output Terminals	Actual Source Impedance	For Use With Nominal	GAIN SW *3	Output Level		Connector
				Nominal	Max. Before Clip	
OMNI OUT 1-16 <M7CL-32/48> OMNI OUT 1-8 <M7CL-48ES>	75 kΩ	600 Ω Lines	+24 dB (default)	+4 dBu (1.23 V)	+24 dBu (12.28 V)	XLR-3-32 type (Balanced) *1
			+18 dB	–2 dBu (616 mV)	+18 dBu (6.16 V)	
PHONES	15 kΩ	8 Ω Phones	—	75 mW *4	150 mW	Stereo Phone Jack (TRS) (Unbalanced) *2
		40 Ω Phones		65 mW *4	150 mW	

* 1. XLR-3-32 type connectors are balanced. (1=GND, 2=HOT, 3=COLD)
* 2. PHONES stereo phone jack is unbalanced. (Tip=LEFT, Ring=RIGHT, Sleeve=GND)
* 3. There are switches inside the body to preset the maximum output level.
* 4. The position of the level control is 10 dB lowered from Max.
* In these specifications, 0 dBu = 0.775 Vrms.
* All output DA converters are 24 bit, 128 times oversampling.

Digital Input & Output Characteristics

Terminal		Format	Data Length	Level	Audio	Connector
2TR OUT DIGITAL *1	AES/EBU	AES/EBU Professional Use *1	24 bit	RS422	—	XLR-3-32 type (Balanced) *2
EtherSound <M7CL-48ES>		EtherSound	24 bit	100Base-TX	48ch Input/24ch Output @48kHz	etherCON *3

* 1. The channel status of 2TR OUT DIGITAL is described on page 294.
* 2. XLR-3-32 type connectors are balanced. (1=GND, 2=HOT, 3=COLD)
* 3. IN, OUT

Control I/O Characteristics

Terminal		Format	Level	Connector
NETWORK		IEEE802.3	—	RJ-45
3rd Port <M7CL-48ES>				
MIDI	IN	MIDI		DIN Connector 5P
	OUT			
WORD CLOCK	IN	—	TTL/75 Ω	BNC Connector
	OUT		TTL/75 Ω	
REMOTE <M7CL-32/48>			RS422	D-Sub Connector 9P (Male)
LAMP 1(32ch), 2(48ch)		—	0 V – 12 V	XLR-4-31 type *1
USB HOST		USB 1.1	—	A type USB Connector

* 1. 4pin=HOT, 3pin=COLD, Lamp rating 5 W, Voltage control by software

YAMAHA

YAMAHA CORPORATION P.O. BOX1, Hamamatsu Japan www.yamahaproaudio.com

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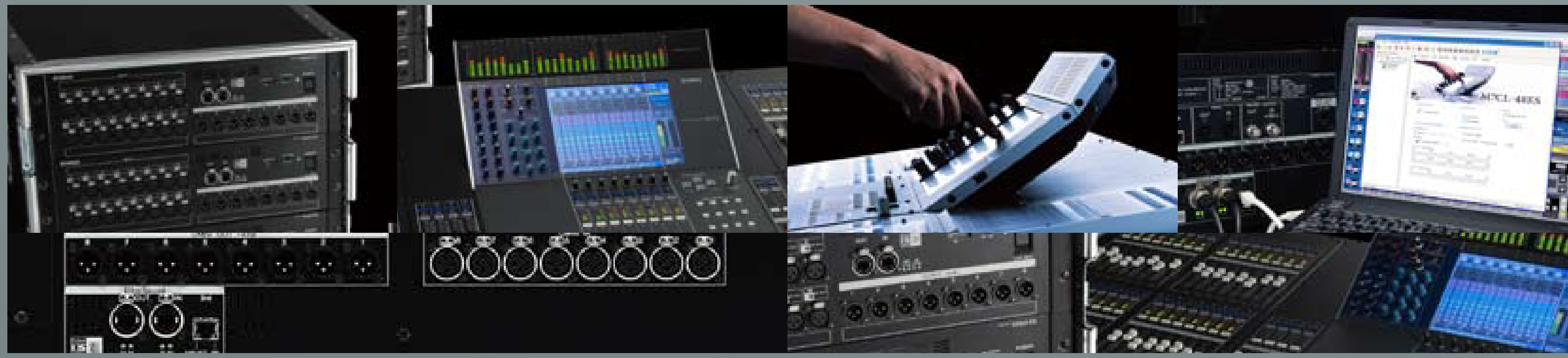
DIGITAL MIXING CONSOLE

M7CL

VERSION3

M7CL-48ES / M7CL-48 / M7CL-32

STAGE BOX SB168-ES





The World's Most Popular Digital Mixer Goes Remote

DIGITAL MIXING CONSOLE

M7CL-48ES





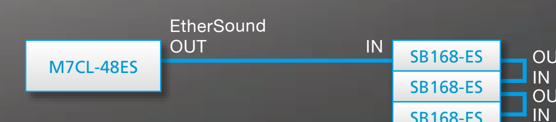
The M7CL digital mixing console featuring Yamaha's groundbreaking Centralogic™ interface has become a standard for intuitive operation, flexible control, and superior sound quality in the highly competitive field of live sound reinforcement. Now here's some great news for current and future M7CL users: firmware version 3.0 provides significant enhancements and is a free upgrade for current users, and the family has grown to include the M7CL-48ES with built-in plug-and-play networking to as many as three Yamaha SB168-ES stage boxes. So now you have a choice between the M7CL-32 and M7CL-48 with direct-to-console analog connectivity, or the M7CL-48ES with primary analog input and output via remote EtherSound connected stage box units that can be located as required for optimum convenience and minimum analog signal degradation.



The Yamaha M7CL series: still the most user-friendly digital mixing consoles available, now with improved functionality and a model that makes remote I/O easier than ever.

Set Up an M7CL-48ES System in Minutes

It really is this simple: just connect the console to the stage boxes, set the stage box DIP switches, and auto-configuration does the rest. You'll be ready to roll in a matter of minutes.



Version3 Keeps the M7CL Ahead

Nothing stands still in the world of live sound, and once again the M7CL leaps ahead of the curve.

M7CL firmware Version 3.0 is based on valuable feedback Yamaha has received from dedicated professionals in the field, delivering enhancements that can significantly improve workflow and efficiency in real-world applications.

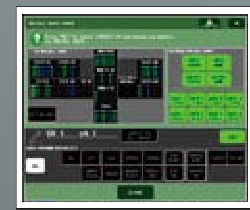
Sends on Fader in M7CL V3 Editor

Sends on Fader functionality in the M7CL V3 Editor software provides remote console-independent Sends on Fader operation so that, for example, an engineer could make stage monitor adjustments from a tablet PC while standing in front of the monitors.



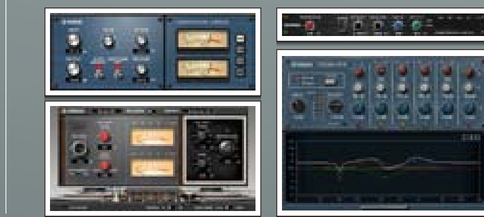
Additional Recall Safe parameters

Additional Input Patch, Output Patch, Direct Out Patch, and Insert Out Patch Recall Safe parameters provide unprecedented setup flexibility and control.



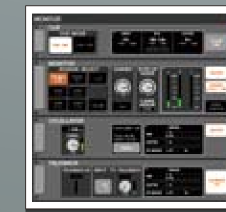
VCM Effects are now available

Top-class VCM compression, equalization, and tape saturation simulation effects from Yamaha's "K's Lab" division are now standard: Comp 276/276s, Comp 260/260s, Equalizer 601 and OpenDeck.



ST IN 1-4 are now available for talkback

It is now possible to use the console's stereo inputs for talkback as well as the mono inputs, maximizing compatibility between the M7CL-48ES and other M7CL consoles.



Direct Sends on Fader access from the M7CL knobs in Sends on Fader mode

Direct Sends on Fader access from the M7CL knobs in Sends on Fader mode gives the operator more options for a smoother, more efficient workflow.

There's More …
The features listed here are just a few of the enhancements provided by Version 3.

The Extended M7CL Family – Ready to Meet New Challenges

M7CL-48ES

Specifically designed for use with SB168-ES EtherSound stage boxes, the M7CL-48ES replaces the 48 internal head amps of the M7CL-48 with two EtherSound ports that provide plug-and-play connection to up to three SB168-ES units.



*Photo shows console with optional MBM7CL meter bridge installed.

- Two EtherSound ports for easy auto-configured connection to as many as three SB168-ES stage boxes in daisy-chain or ring configuration. A third port is provided for permanent connection to a computer.
- 48 mono and 4 stereo inputs (a total of 56 mixing channels), 16 mix buses, LCR bus, 8 matrix channels, and 8 DCAs
- 8 assignable omni inputs and outputs, and 3 Mini-YGDAI card slots.
- Virtual effect and EQ rack: up to 4 simultaneous multi-effect processors; up to 8 simultaneous 31-band graphic EQs.
- Centralogic™ interface: central, logical, and intuitive.
- Dual power modes: use the built in power supply, or add an external PW800W power supply unit (optional) for failsafe dual-supply operation.



STAGE BOX

SB168-ES

SB168-ES 16-in/8-out EtherSound Stage Box

The SB168-ES is a 3U-size remote stage box that provides 16 channels of analog input – each with its own top-performance head amp – and 8 channels of analog output. Multiple units can be used simultaneously. Digital EtherSound signal transmission to and from the console eliminates the need for bulky analog snakes while minimizing the length of microphone cables for optimum audio performance. The SB168-ES is also easy to set up, providing significant time and cost savings.

SB168-ES firmware version 1.1 and EtherSound module firmware version C16 are required for full functionality with the M7CL-48ES. For details and updates see the Yamaha pro audio web page at: http://www.yamahaproaudio.com/



Three SB168-ES units can be comfortably mounted in a compact rack.

* When three SB168-ES units are mounted in the same rack with no space in between, please set their fan speeds to HIGH.

M7CL-48

48 high-performance head amps onboard allow analog microphone and line signals to be directly hooked up to the console. Ideal where analog infrastructure is already installed.

- 48 mono microphone/line inputs, 4 stereo inputs, and 3 Mini-YGDAI card slots (a total of 56 mixing channels).
- 16 mix buses, LCR bus, 8 matrix channels, and 8 DCAs assignable to 16 omni outputs.
- Virtual effect and EQ rack: up to 4 simultaneous multi-effect processors; up to 8 simultaneous 31-band graphic EQs.
- Centralogic™ interface: central, logical, and intuitive.
- Dual power modes: use the built in power supply, or add an external PW800W power supply unit (optional) for failsafe dual-supply operation.



*Photo shows console with optional MBM7CL meter bridge installed.



M7CL-32

All the features and performance of the M7CL-48, but with fewer input channels for optimum integration and economy in applications that don't require more than 32 inputs.

- 32 mono microphone/line inputs, 4 stereo inputs, and 3 Mini-YGDAI card slots (a total of 40 mixing channels).
- 16 mix buses, LCR bus, 8 matrix channels, and 8 DCAs assignable to 16 omni outputs.
- Virtual effect and EQ rack: up to 4 simultaneous multi-effect processors; up to 8 simultaneous 31-band graphic EQs.
- Centralogic™ interface: central, logical, and intuitive.
- Dual power modes: use the built in power supply, or add an external PW800W power supply unit (optional) for failsafe dual-supply operation.



*Photo shows console with optional MBM7CL meter bridge installed.





Centralogic™
Total Access for Absolute Control

Yamaha's touch-panel based Centralogic™ interface simplifies digital operation to the point where it is actually as intuitive as analog … if not easier. All mix controls other than the individual motor faders provided for each channel can be accessed via just two displays: Overview or Selected Channel.



Overview

The Overview display – the console's default display – gives you a standard view of the 8 channels selected via the Centralogic™ navigation keys. These keys, arranged in an exact replica of the 8-channel channel groups on the console, let you instantly bring any group of 8 channels to the central controls with a single button-press. You can then touch any row of controls on the display screen to focus on them – pan, or bus send, for example – and adjust via the corresponding multi-function encoders immediately below the display. You should be able to perform a basic mix on the M7CL without even having to open the manual.





Selected Channel

To adjust pan for a channel, for example, simply press the channel's [SEL] key and rotate the console's physical PAN control. The same applies to preamp gain, dynamics, high-pass filter, EQ, and bus send control. Adjustments are clearly shown on the display as you make them, as is the status of all mix parameters for the currently selected channel. You can zoom in on any of the on-screen parameters for in-depth control by simply touching the parameter on the screen. When you're focused on a parameter the multi-function encoders below the display screen adjust the corresponding parameters in the display.

Virtual Effect and GEQ Rack

M7CL consoles give you an outstanding range of high-resolution effects and graphic equalizers onboard.

Just touch the RACK button on the M7CL display, and the virtual effect and EQ rack pops right up for instant, easy access. A few quick touches on the screen and you can easily patch effects or graphic EQ into any channel and output. Another touch or two and you can get right inside the effects for detailed editing. The M7CL lets you use up to 8 signal processors simultaneously – normally that's up to 4 effects and 4 graphic EQ units. But since the effect units can also function as graphic EQs, you can use more EQ units if you don't need all 4 effects. Built-in effects range from ambience and echo to modulation and distortion, plus Yamaha's superlative REV-X package for some of the most natural-sounding ambience effects available anywhere. The standard 31-band graphic EQ modules are directly adjustable via physical controllers, and Flex15GEQ modules allow GEQ to be applied to up to 16 channels at once! More effect and GEQ details are provided on the following page.



VCM Effects Deliver Analog Smoothness and Warmth

Version 3.0 brings a selection of previously optional VCM effects to the M7CL platform, providing truly musical performance and subtleties that simple digital simulations cannot even approach.

These compressor and EQ effects, now standard features of all Version 3 M7CL consoles, faithfully capture the unique sound and saturation of analog circuitry with VCM technology that actually models individual analog circuit components, right down to the last resistor and capacitor. All VCM effects are sonically fine-tuned by leading engineers, and feature carefully selected parameters that can be precisely controlled via a simple, refined interface.

Compressor 276
Recreate the fast response, frequency characteristics, and tube-amp saturation of the most in-demand analog compressors for studio use.

Compressor 260
Features faithful modeling of the solid-state VCA and RMS detection circuitry of the late 70's for live sound reinforcement applications.

Equalizer 601
Delivers the unique characteristics of 70's analog EQ circuitry, featuring comprehensive graphical editing capability.

OpenDeck
VCM technology recreates classic tape compression and saturation with extraordinary realism.



Sophisticated Sonic Control

The M7CL's extraordinarily intuitive control interface receives a lot of attention,
but the sound of these fine consoles is outstanding as well.
After all, it really is all about the sound.

Versatile Channel Module Functions

HA Gain

Adjusts gain of the console's class-leading input-channel head amplifiers over a 72-dB range. HA gain is recallable like almost all of the console's other settings. Touch the HA section of the display to access the +48V phantom power and phase settings.

DYNAMICS 1 and DYNAMICS 2

DYNAMICS 1 adjusts gate threshold level for input channels, or compressor threshold level for mix, matrix, or stereo/mono channels. DYNAMICS 2 adjusts compressor threshold level for input channels. In either case the actual parameter controlled depends on the dynamics processor selected from the well-stocked dynamics library provided – gates, compressors, expanders, and even de-essers for advanced vocal processing. Although initially set up for gate + compressor processing, you can also use dual compressors.



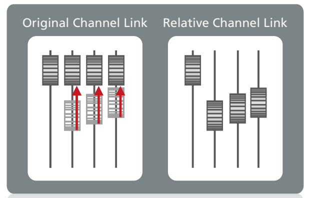


EQ

This very versatile 4-band parametric EQ section affords extraordinary equalization control and quality for all inputs and buses. Switchable Type I and Type II EQ algorithms let you choose the type of EQ response that best suits the application.



Relative Level Channel Link V2



There will undoubtedly be times when you'll want to link a pair of faders to handle stereo signals, or perhaps even link more channels for simultaneous operation. The M7CL lets you link as many channels together as you like, and even deselect parameters that you don't want to be linked. You can even create links with offsets in level.

MIX / MATRIX

Send controls for the 16 mix buses and 8 matrices that can be used as auxiliary, monitor, effect send, or group controls depending on whether the AUX SEND (VARI) pre-attenuator or pre/post-fader mode or the GROUP (FIXED) mode is selected. There's also an INPUT TO MATRIX mode that lets you send the input channel signals directly to the matrix.

Outstanding Effects and Effect Control

High Resolution Effects

Yamaha digital effects are highly regarded in the professional sound field for a very good reason: they are simply the best. Whether you need to add a touch of reverb or manipulate a sound for other-worldly effect, the M7CL offers everything built in and ready to roll. The M7CL also comes with Yamaha's superlative REV-X package for some of the best ambience effects available anywhere, and a selection of VCM effects that deliver truly musical analog compression, saturation, and EQ.

Standard or Flex15GEQ

The M7CL's standard graphic EQ modules offer a full 31 bands for precise control. If your application requires more EQ capability than the standard EQ modules provide, the M7CL offers Flex15GEQ modules that function as two 31-band units with 15-bands available at a time. You can use up to 16 channels of Flex15GEQ!

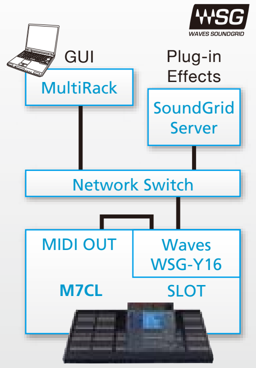
Direct EQ Control

Any of the 31 bands on the graphic equalizer modules can be directly controlled via the Centralogic™ faders. Other convenient control features include the ability to instantly reset any band to nominal simply by pressing the appropriate [ON] key.

Waves SoundGrid System

An external plug-in platform developed specifically for live sound.

With a WSG-Y16 interface card installed in one of the M7CL expansion slots, the Waves MultiRack application running on a laptop computer, and a Waves SoundGrid Server, sound engineers can deploy multiple instances of renowned Waves plug-ins in the live sound environment, with extremely low latency. M7CL and SoundGrid scene recall can be linked via a simple MIDI connection.



Visit the Waves Live website for more information: http://www.waveslive.com/

Streamlined Operation

A streamlined, efficient workflow is essential to delivering the best sound under any conditions.
M7CL consoles give you the tools you need to make the most of any situation.

Efficient Interface and Control Functions

Centralogic™ Navigation & Physical Controls

The 8 Centralogic™ faders are of the same type as the primary channel faders. Simply press the appropriate Centralogic™ navigation key to bring control of any group of 8 input channel faders to the Centralogic™ controls and Overview display. The multi-function encoders at the top of each Centralogic™ control strip are used to control the parameters you "focus" on by touching the appropriate area of the Overview display.

User Defined Keys

The 12 User Defined Keys can be assigned to perform a range of handy functions. You could assign one for tap-tempo input of delay times, others to jump to specific display screens, to control specified mute groups, or to activate talkback, for example. An innovative User Defined Key function is "Set by SEL", with which the channel [SEL] keys perform a range of alternate functions if pressed while the assigned User Defined Key is held: reset the defaults for that channel, turn phantom power on or off, set the channel fader to nominal … and more.





Easy Channel Identification





Channel names and icons appear at the top and bottom of every channel in the Overview display, and by simply touching one you can select one of the preset names provided or enter your own via the convenient onscreen keyboard. There's even an excellent selection of icons you can choose from for easy visual identification of the source type.

DCA and Mute Groups

The levels of channels assigned to a DCA group are controlled from one of the console's DCA faders in the Centralogic ™ control area. Any number of channel faders can be assigned to any of the console's 8 DCA faders. Mute grouping is another feature that can be a great advantage in live sound applications. Any number of channels can be muted or unmuted via assigned User Defined Keys. Up to 8 mute groups can be specified.

Straightforward Connections & Patching

The M7CL-32 and M7CL-48 rear panels have individual balanced inputs for each of the console's input channels. All outputs are patched to the 16 OMNI OUT connectors. All you have to do is plug in your sources and output system and you're ready to mix. If you need a different routing arrangement re-routing is easily accomplished via the M7CL's straightforward digital patching interface.

Features for Optimum Monitoring

SENDS ON FADER

When working on a monitor mix, touch the Sends on Fader button on the display to instantly assign the selected mix bus sends to the faders so you can visually confirm send levels and adjust them with full-length fader precision. Sends on Fader works for the matrix sends as well.
Version 3 adds new Sends on Fader functionality: press a Mix Send knob in the Sends on Fader mode to select the corresponding mix bus for speedy access to mix send levels. If you currently use User Defined Keys to jump to Sends on Faders, this new feature will free up precious User Defined Keys for even faster operation.

Sends on Fader in M7CL V3 Editor V3

With the Version 3.0 firmware Sends on Fader functionality is now available in the M7CL V3 Editor. This could allow a monitor engineer to use a tablet PC to remotely adjust the send level of an on-stage monitor, for example.

Monitor/Cue level control via Mono/Stereo Faders V2

You have a choice of controlling Monitor/Cue level using either the Mono or Stereo fader and the Monitor Level encoder. For many engineers the fader provides better visual level indication, for more precise, comfortable adjustment.



Bus Setup

Each of the M7CL mix buses can be quickly assigned for mono or stereo operation. Pre-EQ send is also available, and this can be an advantage when using the mix buses to feed an in-ear monitor system, for example.

Digital Advantages

Digital technology is impressive, but is only meaningful if applied with focus and care.
Yamaha delivers maximum digital value with features that really make a difference.

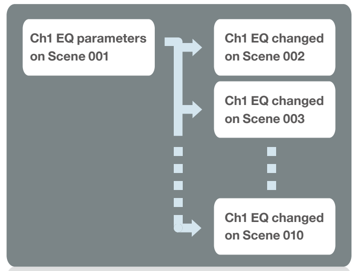
Memory & Recall

Store and Recall Up to 300 Scenes

A “scene” is a complete snapshot of all the console’s settings, and the M7CL lets you store up to 300 complete scenes for instant recall whenever they’re needed. This makes it a snap to reset the entire console for band changes, for example. You could also store basic setups for different types of shows, then recall and tweak the settings as required.

Global Paste V2

Global Paste allows simultaneous editing of parameters on multiple scenes, eliminating the need to recall and edit individual scenes. If you need to make last minute changes to HA or EQ settings in all scenes because a fill-in musician is bringing different instruments to a particular show, for example, Global Paste will have the job done in no time.



Recall Focus and Recall Safe Functions

Recall focus lets you specify the parameters to be recalled with each scene, while recall safe allows you to specify parameters that are not to be recalled with a scene. There are actually two kinds of recall safe: global recall safe specifies parameters than will not be changed when any scene is recalled, and scene-specific safe parameters that will not be changed when a specified scene is recalled. You could use global recall safe to prevent any scene recall operation from changing a critical overall EQ setting, or use safe parameter settings to prevent the vocal channel fader setting from being changed by recall of a specific scene.



Channel Library V2

The Channel Library is a memory bank that stores channel parameter settings such as dynamics and EQ. Store your most frequently used parameter settings for fast, efficient setup.

Access and Data Management

Multi-level Access Control

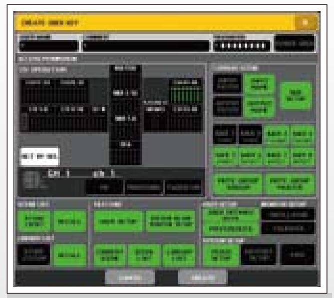
In many applications it is desirable to prevent unauthorized access to the console, or restrict access to a limited set of functions. The M7CL’s access management features can be a significant advantage for overall system administration.

USB Key Access

User access can be controlled via USB memory keys with passwords. The administrator can assign specific functions to each unique key, so the user only has to log onto the console with the USB key containing the password to begin operation at the assigned level.

USB Memory for Convenient Data Management and Portability

Standard USB memory sticks can be plugged into the M7CL USB port for convenient storage and recall of a range of data: scenes, patches, user libraries, channel names, preferences … essentially all system data. In addition to providing a secure backup, this makes it easy to transfer data between the console and the M7CL Editor application running on your personal computer, or directly between M7CL consoles.





M7CL-48ES Features

The M7CL-48ES adds EtherSound stage box connectivity for state-of-the-art system layout and signal routing capability, while retaining superior M7CL efficiency, functionality, and sound.

Onboard EtherSound and 3rd Port

Where the original M7CL-48 has 48 analog inputs, the M7CL-48ES has a total of three EtherSound ports: two for connection to as many as three Yamaha SB168-ES EtherSound stage boxes in either daisy chain or ring configuration. The 3rd port allows permanent connection to a computer while the stage boxes are connected in ring mode.



Analog Insert via OMNI I/O

Although the 48 analog inputs are replaced by EtherSound ports, the M7CL-48ES retains eight OMNI inputs and eight OMNI outputs that can be used for direct analog connection. These provide an ideal way to insert outboard processors and other equipment.



Auto-configuration for Plug-and-Play Convenience

To set up a basic daisy-chain system all you need to do is connect the M7CL-48ES to the SB168-ES stage boxes via appropriate cables and turn on the power. The ES Monitor software is not required. Everything is configured automatically, and you don’t even have to set or worry about the order of the ID numbers of the SB168-ES units used. Switch a few settings and setting up a ring network is just as easy.



	Number of SB168-ES units	ID #1	ID #2	ID #3
Daisy Chain	Three	1&7	2&7	3&8
	Two	1&7	2&8	
	One	1&8		
Ring	Three	1&5	2&5	3&6
	Two	1&5	2&6	
	One	1&6		

Simple SB168-ES switch settings allow a variety of configurations.

Data Compatibility with All M7CL Consoles

The M7CL-48ES is compatible with backup data created by the M7CL-32 and M7CL-48 consoles, so time and effort you’ve spent creating finely-tuned setups for the M7CL-32 or M7CL-48 won’t be wasted.





Three Slots for Flexible System Expansion

The M7CL-48ES retains the three Mini-YGDAI expansion slots of the M7CL-32/48, so expandability is not reduced in any way. The expansion slots can be used to add analog or digital I/O, versatile Aviom personal monitoring systems, direct live recording capability via high-performance Dante digital media networking, the ability to use multiple external processing plug-ins via the Waves SoundGrid system, and more.

AVIOM
Dante
WSG WAVES SOUNDGRID
adat OPTICAL
CobraNet
MADI
AES/EBU
TDIF
HD/SD-SDI
Analog

M7CL V3 Editor

The M7CL V3 Editor application provides off-line programming access to all console parameters.
Setups can be downloaded from the computer to the console either via direct Ethernet connection or a USB memory stick.



Overview

The Overview display offers a convenient view of the mix parameters for 16 channels or mix buses at a time. In Version 3 Sends on Fader functionality is also available via the editor's Overview display.



Selected Channel

Similar to the Selected Channel display on the console, this display provides comprehensive access to all parameters for the selected channel. Multiple “Additional Views” for other channels can be opened simultaneously.



Group/Link

Channel linking can quickly and efficiently accomplished on the console itself, but if you need to create channel link or group setups offline, the M7CL V3 Editor makes the task easy.



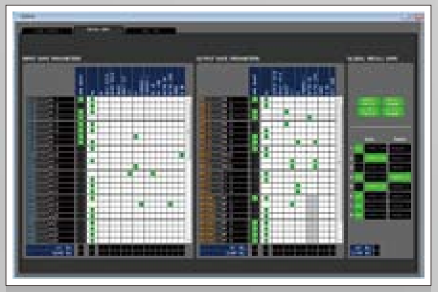
Rack

The M7CL V3 Editor Rack display is essentially the same as the console display, allowing smooth, intuitive effect assignment and editing.



Library

The M7CL V3 Editor allows convenient data library management, too.



Scene

You also have full access to scene functions with the M7CL V3 Editor, including the focus and recall safe functions that allow exceptional control over the parameters that will be included and excluded when a scene is recalled.

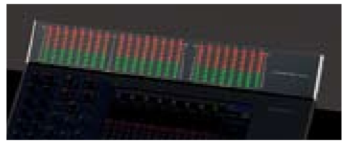
Options

Optional expansion cards and other add-ons allow M7CL consoles to be customized for seamless integration with just about any system or application.

Mini-YGDAI Expansion Cards



M7CL consoles have 3 expansion slots on the rear panel that accept a wide range of optional Yamaha Mini-YGDAI cards that can be used to add analog and/or digital I/O or networking capability in a range of formats. You could add Mini-YGDAI cards to connect to an MTR for direct multitrack recording, or to connect an Aviom personal monitoring system, for example. You can even use Mini-YGDAI cards to bus-cascade the M7CL with other consoles for significantly expanded input/output capacity. The expansion cards described here are just part of a comprehensive, growing lineup. For complete, up-to-date information on the current Mini-YGDAI card lineup visit Yamaha's pro audio website at: http://www.yamaproaudio.com/

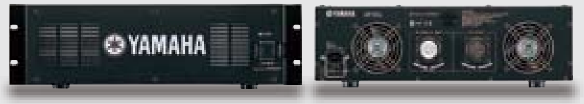


MBM7CL Meter Bridge

Although the M7CL has comprehensive metering facilities built in, the optional MBM7CL Meter Bridge fits right above the console's display and provides high-visibility level monitoring while allowing the display to be used for other operations.

PW800W Power Supply Unit

For many applications you can simply plug the M7CL directly into a convenient AC outlet and use the built-in power supply. The external PW800W Power Supply Unit can be added when maximum regulation and reliability are required (the internal power supply and the PW800W provide redundant failsafe operation).



PSL360 Power Supply Link Cable

PW800W external power supply unit requires PSL360 link cable to connect with M7CL.

LA1L Gooseneck Lamp

The LA1L brightness parameter can be controlled from the Centralogic display and memorized to the A/B banks.

Dante-MY16-AUD by Audinate

The Dante-MY16-AUD card instantly Dante-enables your M7CL. Each Dante-MY16-AUD card provides 16 bidirectional audio channels (16 channels at 48 kHz) and full Dante network audio redundancy over Gigabit Ethernet.

WSG-Y16 by Waves

A true breakthrough for live sound, the WSG-Y16 lets FOH and monitor engineers run multiple simultaneous instances of the same Native Waves plug-ins used in recording studios and mixing rooms the world over.

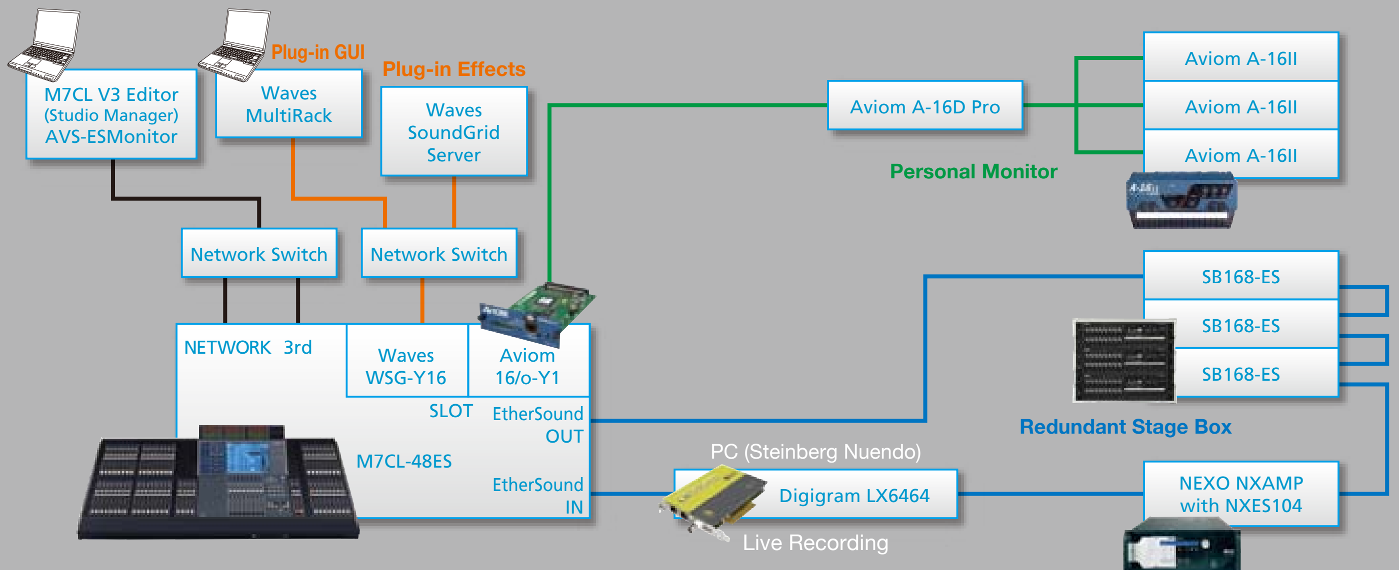
16/o-Y1 by Aviom

The Aviom16/o-Y1 A-Net Card provides a direct digital interface between Yamaha digital products and Aviom's Pro16 series personal monitor mixing systems, including the A-16II and A-16R Personal Mixers.

MY16-AE by Yamaha

Each MY16-AE card adds 16 channels of AES/EBU format digital input and output, allowing direct connection to a range of professional digital audio devices.

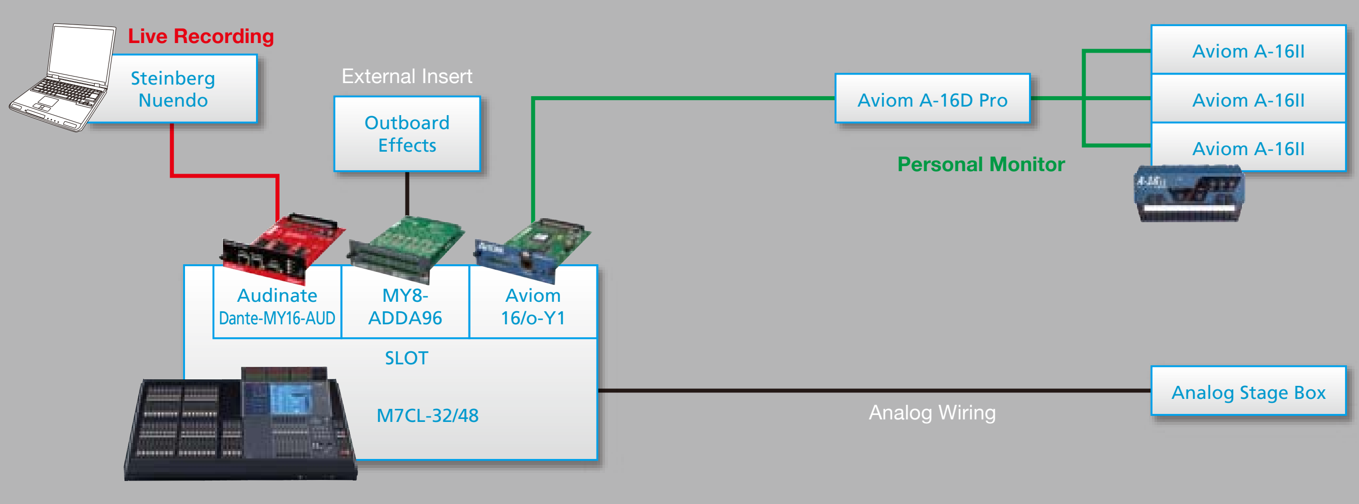
M7CL-48ES System example



- SB168-ES units ring connected for redundancy.
- Digigram LX6464 allows 48-channel live recording to Steinberg NUENDO DAW software.
- Aviom devices provide a clean, simple personal monitoring system.
- Waves WSG-Y16 card and MULTIRACK make a variety of plug-in effects available.

* For this system it is necessary to turn Auto Configure OFF and use the AVS-ESMonitor application to set up the patches.

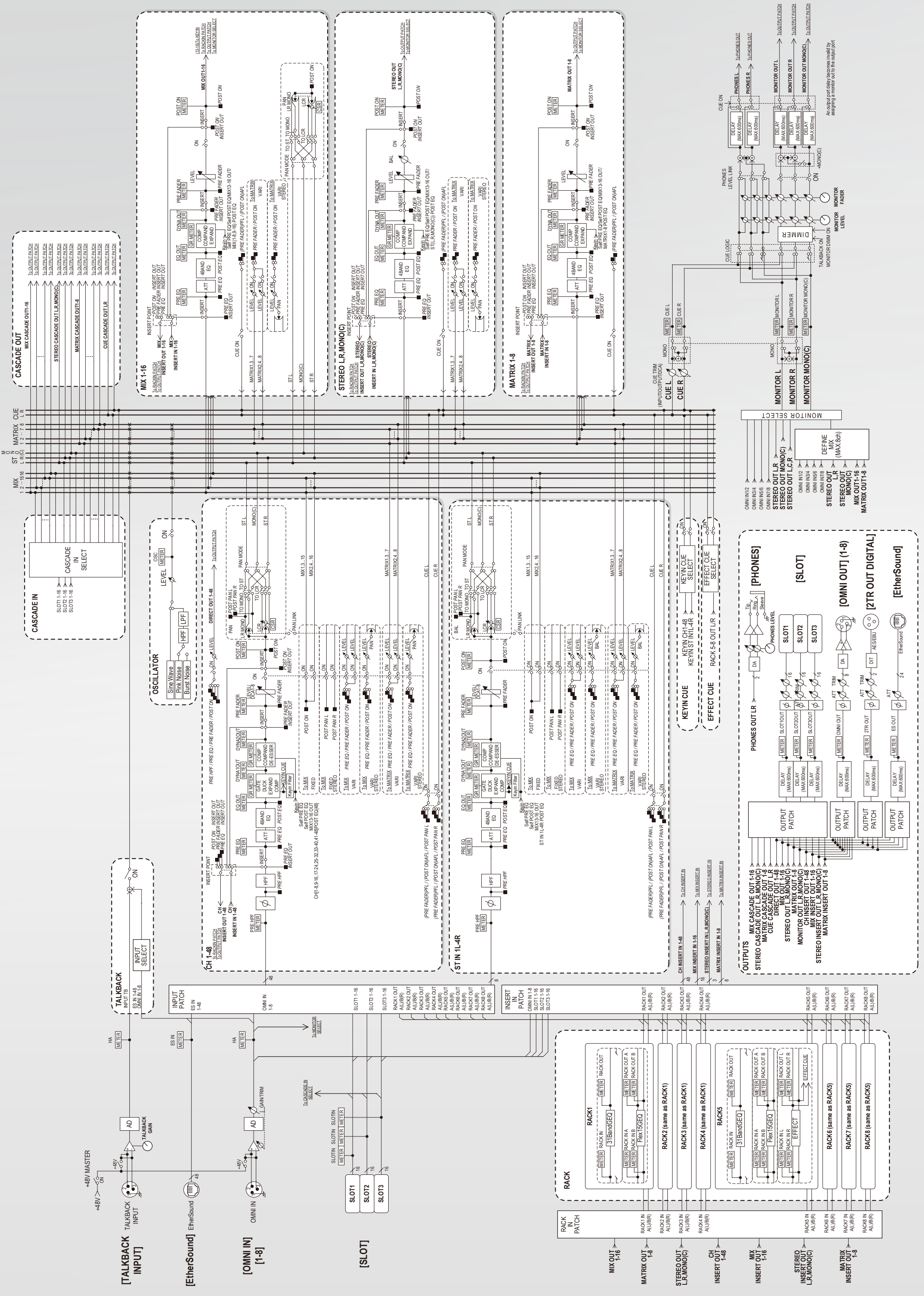
M7CL-32/48 System example



- A simple system that makes full use of existing analog infrastructure.
- Smooth upgrade from an analog console. Card slots provide room for further expansion.
- Aviom personal monitoring devices can be easily added.
- Versatile, high-performance live recording via Audinate's Dante-MY16-AUD card.
- MY8-ADDA96 card allows convenient insertion of outboard effects.

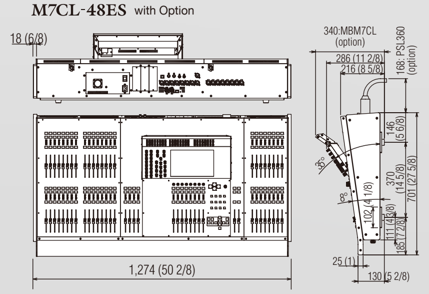
M7CL-48ES

Block Diagram



Dimensions

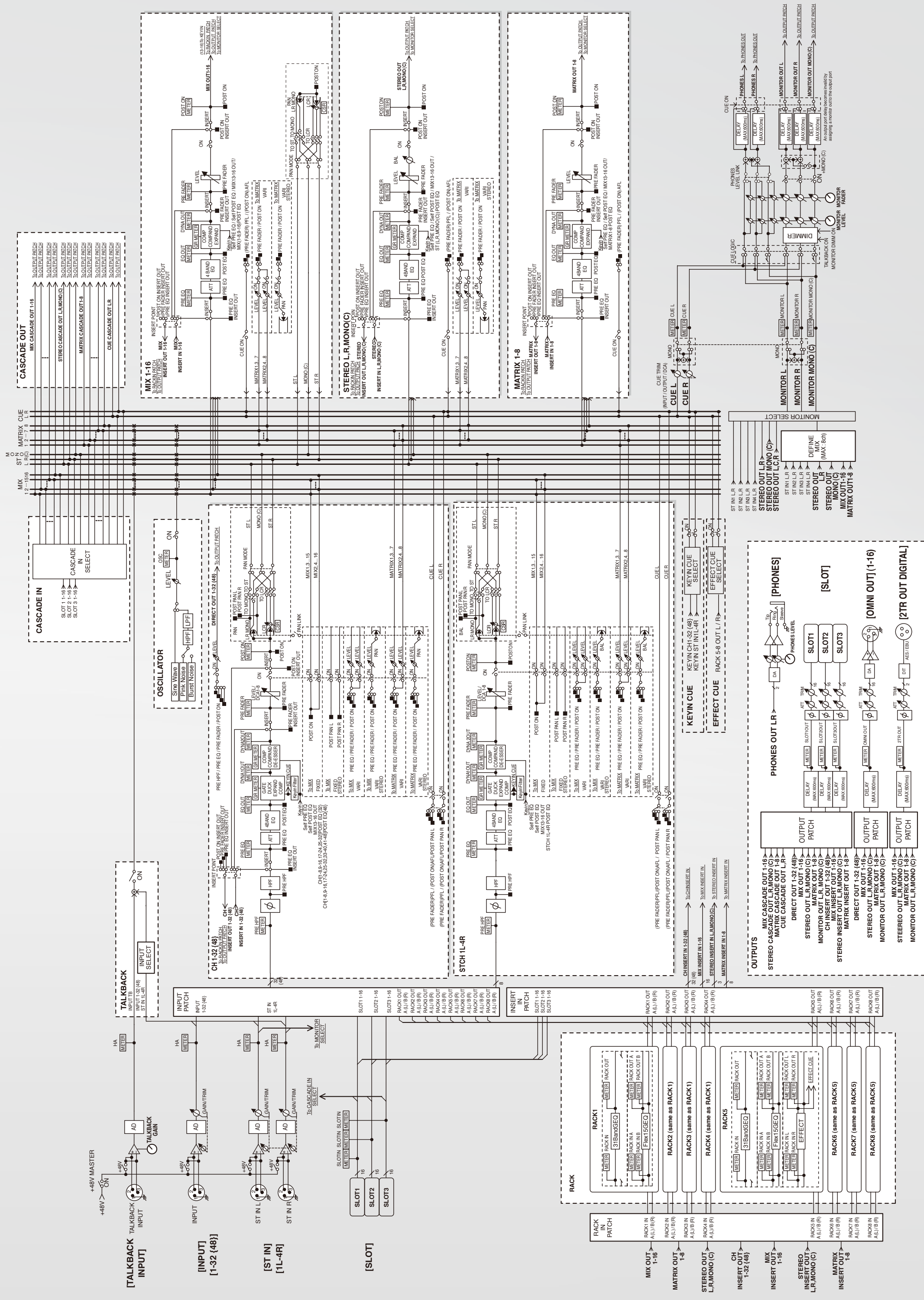
M7CL-48ES with Option



Unit:mm (in)

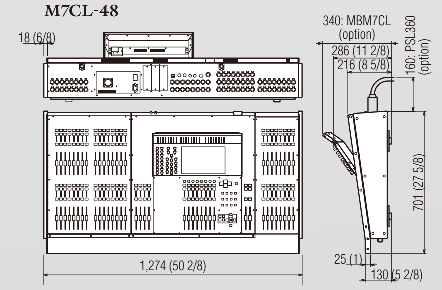
M7CL-32/48

Block Diagram

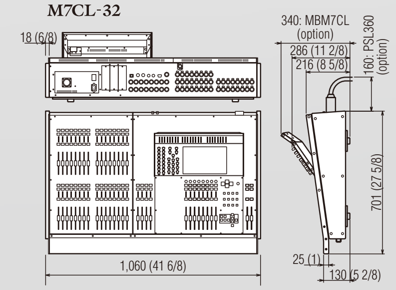


Dimensions

M7CL-48



M7CL-32



Unit:mm (in)